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- Instituto Geologico de Espana. Memorias.  
International Journal of American Linguistics. New York.  
Journal of General Physiology. Baltimore.  
Journal Russe de Zoologie. Petrograd.  
Junta de Ciencias Naturals de Barcelona. Publicacions. Series Geologica.  
Kansas Academy of Science. Bulletin.  
Kgl. Danske Videnskabernes Selskab. Biologiske Meddelelser, Mathematisk-fysiske Meddelelser.  
Laboratorio de Plasmogenia de la Habana. Boletin.  
Madison Botanical Congress. Proceedings, 1893.  
New York State Archeological Association, Morgan Chapter. Researches and Transactions.  
New Zealand Journal of Science and Technology. Wellington.  
Pan American Record. Los Angeles.  
Royal Geographical Society. Supplement of the Geographical Journal.  
St. Louis Natural History Museum Association. Bulletin.  
Societa Italiana dei Microscopisti. Bollettino.  
Soil Science. New Brunswick, N. J.  
South African Institute for Medical Research. Publications.  
South Australia Director of Mines and Government Geologist. Annual Report.  
South Australian Museum. Records.  
Staten Island Institute of Arts and Sciences. Museum Bulletin.

Twelve hundred and twenty-five volumes and parts of periodicals were used on the premises, while 59 volumes were borrowed.

Four hundred and thirty-three volumes have been bound.

The resignation of Furman S. Wilde as Assistant to the Librarian was accepted. He has since been serving with the army in France.

Five hundred and nine serials and twenty-two volumes have been returned to the Superintendent of Public Documents, Washington.

The continued coöperation of Miss Wardle in library service is gratefully acknowledged.

EDWARD J. NOLAN, *Librarian.*

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#### REPORT OF THE CURATORS.

The past year, on account of unprecedeted conditions incident to the war, has not been one in which any important work outside the usual routine of the museum has been possible. Fuel restrictions have prevented the heating of the public halls and during certain days necessitated the closing of the work-rooms. One of our janitors left our employ early in the year and in order to meet additional expenses elsewhere we have managed to avoid the necessity of filling this position. The absence of several volunteer workers during most of the year, and of Mr. Rehn for several weeks, all on work connected with the war has hindered the progress of research work to some extent, while the serious illness of Dr. Skinner has kept him from his office for over two months. Notwithstanding these hindrances, however, the Curators feel that they may con-

gratulate themselves upon having been able to maintain the usual Museum activities without any detriment to the collections or their arrangement during these trying times.

Early in the summer a competent steam engineer was engaged to examine the entire heating plant and to draw up plans for remedying serious defects in the present system as well as for the installation of new boilers. We were fortunate enough to secure two Spencer boilers, which have been placed in the engine house and have already proved very satisfactory, although some of the repiping is still unfinished. The expense of these important improvements is covered by an appropriation made at the last session of the State Legislature and referred to in our last report.

The falling of certain sections of plaster ceiling has necessitated the removal of all the ceiling covering in the mineralogical hall, with the intention of substituting a sheet metal ceiling at the earliest opportunity.

Additional exhibits have been added to the collection of native trees, to the local collection of birds and nests presented by the Delaware Valley Ornithological Club, to the Clarence B. Moore collection of Indian antiquities and to the William S. Vaux collection of minerals.

Numerous classes of school-children have visited the Museum during the year and various duplicate specimens, especially sets of labelled minerals, have been presented to schools in Philadelphia and vicinity.

During the year Dr. Skinner made some important entomological collections in the White Mountains of New Hampshire.

Dr. Stone spent several weeks in making an exhaustive collection of the flora of southern Cape May County, N. J., and some local field work was carried on by other members of the Museum staff. Mr. Clarence B. Moore has also continued his explorations of the Indian mounds of the Southern States and presented the Academy with valuable material. Details of work in the several departments follow.

#### MAMMALS.

A number of valuable specimens received from the Zoölogical Society of Philadelphia have been prepared as skins or skeletons, while a large number of skeletons and skulls previously prepared in the rough have been macerated, numbered and placed in the study series. This work was carried on by the taxidermist, Mr. David McCadden. Besides entering accessions the entire register of the

Rhoads collection, numbering 4,390 entries, has been copied into the regular mammal catalogue.

Specimens have been loaned during the year to Dr. J. A. Allen and Mr. A. H. Howell.

#### BIRDS.

A number of accessions to the local collection have been placed on exhibition and much of the collection rearranged and relabelled. The services of Miss Ruth Faries were secured during nine months of the year and much needed clerical work was accomplished. Several temporary catalogues were copied into the regular Academy register, including that of the Hoopes collection, making a total of some 14,000 entries. In addition new labels were prepared for all the skins of the lower families of Passeres in the study collection, as well as of the Tanagridæ and most of the Fringillidæ.

The eggs in the Pennock collection and many of those in the Drown collection were placed in glass-covered boxes and catalogued, while many unmounted specimens of birds were converted into skin specimens.

Dr. Stone, although mainly occupied with the executive duties of the Museum, revised several of the families in the study collection and prepared a report on the Jewel collection of Panama birds, which has been published in the PROCEEDINGS.

The most notable accessions received during the year were the Mrs. W. A. Drown collection of bird eggs and mounted birds, and a collection of Colombian birds obtained by purchase.

Dr. H. C. Oberholser, Mr. W. E. C. Todd, Mr. Edwin Ashby and Mr. F. H. Kennard have made use of the collections, while specimens have been loaned to Mr. Todd, Mr. C. B. Cory and Dr. C. W. Richmond.

#### REPTILES AND FISHES.

Mr. Henry W. Fowler, who has had charge of the fishes as well as of the reptiles, reports that 1,783 fishes have been received during the year, which have all been catalogued and labelled. He has also critically identified some 400 species of fishes. These comprised specimens in the Academy collection from Brazil, Panama, the West Indies and Australia as well as our entire series of African fishes and a collection from Samoa loaned by Capt. C. F. Silvester, from which the Academy will receive duplicates.

Two papers were published in the PROCEEDINGS on Philippine fishes and on a collection received from Paraguay. Progress was

made on the critical study of the series of flying fishes, half-beaks and green gars.

General care of the collections (both of fishes and reptiles) has occupied considerable time, necessitating the rebottling and cleansing of many specimens.

Mr. Fowler did some field work in Perry County, Pa., and Cape May Co., N. J. Specimens of reptiles were loaned during the year to the American Museum of Natural History. Mr. Alex. Ruthven, Dr. Thomas Barbour, Mr. F. N. Blanchard and Mr. Alvin Seal spent some days in studying material at the Academy.

#### MOLLUSKS.

Dr. Henry A. Pilsbry, curator of Mollusca, reports that accessions to the conchological department have been received from sixty-seven persons and institutions. Among them may be mentioned a series of Congo mollusks from the American Museum of Natural History, including paratypes of many new species, and a considerable number of Hawaiian mollusks received from the Bishop Museum and from Prof. W. A. Bryan. Mr. J. H. Ferriss shared his Arizona collections of 1917 and 1918 with the Academy and Prof. Junius Henderson has presented series of his Idaho and Colorado collections.

The revision of the Academy collection of Pupillidæ has been continued in connection with the publication of a second volume on this group in the Manual of Conchology. In collaboration with Mr. Ferriss a report on the mollusks of the Santa Catalina mountains and the Mogollon mountains, Arizona, has been prepared for publication. Mr. E. G. Vanatta has continued the arrangement of the exhibition series of shells and Miss Caroline Ziegler has made good progress in cataloguing the specimens. Considerable time has been given to the determination of material for correspondents.

Mr. J. A. Ferriss, W. H. Clapp and Edwin Ashby have spent some time in studying in the department during the year, and specimens were loaned to Mr. E. P. Chase, Dr. Paul Bartsch and Mr. J. B. Henderson. Mr. R. T. Jackson also borrowed some fossil mollusca.

#### INSECTS.

The department of Entomology has had the usual care and attention given to it by those in charge. Dr. Henry Skinner and Mr. E. T. Cresson, Jr., have looked after all the orders except the Orthoptera, which have had the attention of Mr. J. A. G. Rehn. The

accessions for the year amount to 2,953 specimens, most of which have been incorporated in the collection.

A number of families have been rearranged: the Scarabædiæ, Rhipiphoridæ, Stylopidæ, Cleridæ, Malachidæ, Meloidæ and Buprestidæ in the Coleoptera; the Scathophagidæ, Sepsidæ and Ephydridæ in the Diptera, and the large series of exotic Noctuidæ among the Lepidoptera. Some valuable material in the last order collected by Dr. Skinner in the White Mountains of New Hampshire was incorporated in the collection. In the order Hemiptera the family Cicadidæ has been rearranged in accordance with identifications made by Mr. Wm. T. Davis, and in the Hymenoptera the H. L. Viereck types of *Andrena* have been placed in the type series.

In the Orthoptera besides the mounting and rearrangement of material, studies have been made of an extensive series of Brazilian material and three papers prepared and published upon it. A study has also been made of our African material as well as of several African collections loaned for identification, of which the Academy will receive a series of duplicates. A paper was also published in the PROCEEDINGS on the North American Eumastæinæ, while correspondence by Mr. Rehn has resulted in the receipt of valuable material in return for determination.

Several visiting entomologists, especially Dr. E. C. Van Dyke, have made use of the collections and material has been loaned to J. R. Malloch, J. S. Hine and R. W. Dawson.

#### PLANTS.

Mr. Stewardson Brown, who has had charge of the herbarium, reports that during the year the herbarium of the late Charles S. Williamson, presented by his sister Miss Mary Williamson, has been distributed throughout the herbarium so that the specimens are now readily accessible with the other material. The J. J. Carter herbarium, the gift of Mr. H. S. Gatchell, has been in a great part mounted ready for stamping and distribution. Numerous other collections received from various sources have been mounted by Miss Ada Allen, who has been continued as an aid in this work.

The local collection has received considerable attention from Mr. S. S. Van Pelt, who has mounted many specimens that have been received. Mr. Bayard Long has also given the collection considerable critical study.

#### MINERALS AND ROCKS.

The Curators are indebted to Mr. F. J. Keeley, Curator of the William S. Vaux collection, and to Mr. Samuel G. Gordon, a student

on the Jessup Fund, for the care of this department. Mr. Gordon has labelled and catalogued a number of accessions to the Wm. S. Vaux and the general collections and prepared a check list of the entire series. The William S. Vaux collection now numbers about 9,000 specimens, nearly half of which are on exhibition; the Academy general series, 10,500 specimens, of which about 1,000 are exhibited, and the Adam Seybert collection, which is kept separate, 1,825 specimens, while there are 80 falls of meteorites represented.

The duplicate specimens not on exhibition are arranged systematically in storage cases immediately below the exhibition series so that they may be consulted with the greatest ease.

Mr. Gordon has overhauled a large number of mineral and rock specimens received at various times and cleaned and labelled such as are of value. The rock series now in the Academy's possession, including the first and second Pennsylvania Geological Survey collections, amounts to about 19,000 specimens.

The most important accession during the year was the Mrs. W. A. Drown collection, presented by Miss Emily Drown, comprising some 6,000 specimens. It was especially notable for the large number of species represented, a number of which were new to our collection.

#### ARCHÆOLOGY.

Miss H. N. Wardle has overhauled several thousand specimens mostly belonging to the Haldemann collection, which were stored in the basement, and has cleansed and identified them, entering some 2,000 in the catalogue. Little new material was obtained during the year.

Mr. Clarence B. Moore's expedition during the spring of 1918 explored territory along the Apalachacola River, the Flint River to Bainbridge, Ga., and the Florida coast from St. Andrew's Bay to Crystal River. The result demonstrated how thorough had been his earlier exploration of the same region, as little new material was obtained. Pottery and artifacts regarded as duplicates were presented by Mr. Moore to the Museum of the American Indian, Heye Foundation. Owing to necessary repairs to his boat Mr. Moore was compelled to abandon his usual autumn expedition.

Throughout the year the undersigned Curators have been without the advice and counsel of their associate Maj. Henry Tucker, who since the entry of America into the war has been in the service of his country in the medical corps of the Army.

WITMER STONE, *Chairman,*  
HENRY A. PILSBRY.

REPORT OF THE CURATOR OF THE WILLIAM S. VAUX COLLECTIONS,  
DECEMBER 1, 1918.

Efforts during the past year, in the direction of securing as many rare and unusual species as possible, have resulted in the addition of no less than 127 species not hitherto represented in the William S. Vaux collection, of which number 87 were purchased and 40 selected from the Drown collection.

This brings the total number of distinct species in the collection up to 804, not including meteorites, hydrocarbons, varieties or doubtful species.

Altogether the number of accessions during the year exceeded 800, of which 104 were purchased, 700 derived from the Drown collection, 3 presented by Mr. Thomas Harvey and 3 presented by Mr. Samuel G. Gordon, who has continued his valuable services in caring for the collection.

Respectfully submitted,

F. J. KEELEY, *Curator Wm. S. Vaux Collection.*

REPORTS OF THE SECTIONS.

BIOLOGICAL AND MICROSCOPICAL SECTION.—The Section held six stated meetings during the year, a reduction of the usual number due to war regulations and the influenza epidemic.

Communications on various subjects were made by members, among whom may be mentioned Messrs. T. C. Palmer, Hugo Bilgram, Dr. Thomas S. Stewart, F. J. Keeley, B. F. Ray, Walter Palmer, Dr. L. A. Faught and C. S. Boyer.

The following officers were elected for the year 1919:

Director.....	J. Cheston Morris, M.D.
Vice-Director.....	T. Chalkley Palmer.
Recorder and Corresponding Secretary..	Charles S. Boyer.
Treasurer.....	Thomas S. Stewart, M.D.
Conservator.....	F. J. Keeley.

CHARLES S. BOYER, *Recorder.*

ENTOMOLOGICAL SECTION.—Six stated meetings were held during the year, with an average attendance of eleven persons. The deaths of Erich Daecke, a contributor, and Benjamin H. Smith, a member, were announced. Arthur H. Napier and George M. Greene were elected members, and Francis M. James, Louis B. LaPlace, Carl Lorup, A. Reginald Allen and Max Reyher were elected con-